

Growing with No. 35. Found as far North as the line of the Ft. Smith and Little Rock R. R.

35. *Osmunda cinnamomea*, L.—Swamps of South Arkansas, also on cliffs of sandstone in the extreme N. W. part of the State upon White River.

ORDER OPHIOGLOSSACEÆ.

36. *Botrychium ternatum*, Swartz, var. *lunarioides*, Milde.—Said to occur in the rich woods of Ark. We have not found it.

37. *Botrychium ternatum*, Swartz, var. *obliquum*, Milde.—Occurs in the low rich woods of S. W. Ark. The Arkansas form has rather broad sterile fronds. We have specimens from S. W. Ark. collected by Miss Mary Jones, of Montgomery Co.

38. *Botrychium Virginicum*, Swartz.—Common in the rich shaded copses of the upland portion of Ark.

39. *Ophioglossum vulgatum*, L.—In N. W. Arkansas upon limestone ledges 200 ft. above the valleys, also wet woods in rich soil.

Some Arkansas Trees.—Mr. Warder will find in the August and September numbers of the GAZETTE for 1880 an account of some specimens of *Castanea pumila* occurring in Hempstead County, which exceed in size those he found near Hot Springs. Specimens two feet in diameter are found in N. W. Ark., near Fayetteville. I am informed that a few specimens of *C. vesca* occur in E. Ark., but whether they are introduced or spontaneous I am unable to decide having never seen the specimens growing. I should like to know more about the occurrence of *Pinus australis* in Ark. I did not find it while in S. Ark. last summer, but *P. mitis* extends as far South as the Texan border. Should also like to know whether *Magnolia grandiflora* grows spontaneously about Malvern.

M. macrophylla and *tripetala* are common in Garland and adjoining counties, but I did not find *M. grandiflora* spontaneous. *Ilex opaca* grows much farther N. in Ark. than Malvern. It is common about Hot Springs.

I have passed from the N. to the S. part of Ark. in order to observe the change of tree covering, and find that it is governed by altitude, moisture, soil and other physical conditions, and that one can pass from one geological horizon to another and not be aware of it by a change in vegetation.

It is true that *Q. aquatica* and *Phellos* are not found in the N. part of the State, but they extend on the sub-carboniferous as far as the mountains about Ft. Smith, the distribution being termed by the physical rather than geological conditions. The same may be said of *Ilex opaca* and other species.

One could go from Malvern through Magnet Cove to Hot Springs and from the vegetation never dream he was passing across such a remarkable metamorphic region.

Q. Phellos and *aquatica* might be added to the Oaks of Garland Co., as they grow about Hot Springs.

This is not written in the spirit of criticism, but that I may know more about some species spoken of by Mr. Warder in March GAZETTE, p. 188.—F. L. HARVEY, *Ark. Ind. Univ., Fayetteville, Ark.*